Indian Institute of Technology, Bombay

CS101 PROJECT
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LIBRARY MANAGEMENT SYSTEM
USER MANUAL

Slot 6 Group 7

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Library management system

Information Technology has revolutionized the life of human beings' and has made the lives easier by the various kinds of applications. In the light of the rapid changes with the use of IT, there are many tools, technologies and systems that have been produced and invented. In the modern world, time is short so if there are many processes taken place at same time within a place there is a need for integration of all the processes, creation of paperless environment also ensures efficient task management

This project is concerned with developing a Library Inventory Management System using Object Oriented Programming. In this system the library management becomes more efficient & easier to handle with its reliable system components.

Library systems are operated manually by group of people. In such situations many people involved in the process of managing the library such a way that to keep records regarding the books & students (borrowers), check the books manually, keep records on issued books etc. All these things have to be carried out manually & if the library is large in content handling is also a problem. On the other hand keeping large amount of maintenance workers may cost a lot & it will not be efficient for a library.

On the borrower's point of view, in manual system borrower can't find a book exactly at once as they are not ordered well. Sometimes user might be searching for a book that is not available in the library in such situations people get annoyed or depressed. Therefore there should be a reliable way to manage the library system.

Aim

The primary aim is to develop a system that can handle and manage the activities involved in a library in an efficient and reliable way. Less Managing and easy searching availability and user profile managing are major goals in this project.

OBJECTIVES

1. Develop a system that can replace the manual library managing system.

2. Develop a database which stores user details & book details.

3. Give reliable search facility for the users.

4. Librarian, members and new users should have separate logins.

5. Create an easy way to understand user friendly environment.

6. Attractive user interfaces to navigate through the system for the users.

PROPOSED SOLUTION

To achieve the aims & objectives of this project, the main thing is to identify the main features that are involved in the system. In this scenario, there are three types of users; they are librarian, members and new users. All these users should be able to login to the system with separate logins. New users should have the facility to register. A database is there to store the user details & book details. This information can be retrieved by the users as per their privilege. Anyone can search the system using given specifications & the availability of the books are updated by the system immediately.

1. Activities involved with Member

- Search for a book – by title, ISBN and author.
- Issue/Return books
- Reserve books
- Request books

2. Activities involved with Librarian

- Maintain book information -add/delete books
- Maintain database
- Process book requests

3. Activities involved with new user

- Register to become a member

All these activities should be carried out by the system and the interfaces should be user friendly for the new users.

Requirements Specification

Functional Requirements

- Roll number and librarian identification must all be unique as they form the primary keys of the respective tables.
- A book may be deleted or added by the librarian, and the librarian only.
- A book may be issued to a member only if there are still issues left in the books database.
- A book may be issued to a member only if the book isn't already reserved by another member.

Data Requirements

- The Library Management System shall be required to maintain information about its users and books.
- It shall store databases for students, librarians and books.
- The student database stores information about a student's roll number, password and books issued.
- The book database stores information about a book title, author, issues available and ISBN number.
- The librarian database stores information about a librarian's id and password.

Software Requirements

The system on which the Library Management System is installed must have Microsoft Windows OS in it. The program can run using a GNU/C++ Compiler.

Services provided to the user

The Library Management System automates the basic library functions to aid in the day-to-day operations of a library. It supports functions such as issue, return, the very basic functions of searching for a particular book, etc.

It also maintains data about books about books, teachers, students records that are required during various library operations. The software aims to make the system user friendly and efficient.

The functions that the Library Management System provides are as follows:

1. INSERT: This operation is performed when new data needs to be added to the system, e.g. when department purchases a new book, the book's entry is inserted in the books database. This option has three choices:
    a) Book: This choice allows entering data about newly purchased books into the books database. The data entered includes book's author, title, ISBN. The data must be accurate and must be entered in the correct format as indicated in the forms.
    b) Member: This will enter new record for a student in member's database. This option is chosen when a student is enrolled in the college.

2. DELETE: This operation clears the existing records in the various databases. It is used when a book is disposed of from library.

3. UPDATE: This function updates data in the various records. This operation is supported by all the three entities:
    a) Book: This function generally would not be required for updating a book's status as that data wouldn't change.
    b) Student: This will update the book issued/returned by the member.

4. SEARCH: This function is used to search particular data from the Database, e.g. search for a particular book, to know whether it is currently available in library or not. This can be done by entering value in any one or more fields in the form to perform the search such as title or author name.

5. ISSUE: This operation is used for issuing a book to a member of the library. For this operation to be successful the member must meet some criteria like she should not have issued books to her maximum limit previously. All these checks are done by software. If the operation is successful, then the system automatically stores the data of the book in the issued list of the student.

6. RESERVE: This operation allows a member of the library to reserve a book for himself in case there aren't any issues available at the time. Using this, he can ensure that the next time an issue is available, he can issue it firsthand.

7. RETURN: Using this operation a member returns the items, which she loaned, from the library back to it. The software deletes the entry of the book from the members issued books record.